

BIM Wiki – Layering Multiple Files in AutoCAD

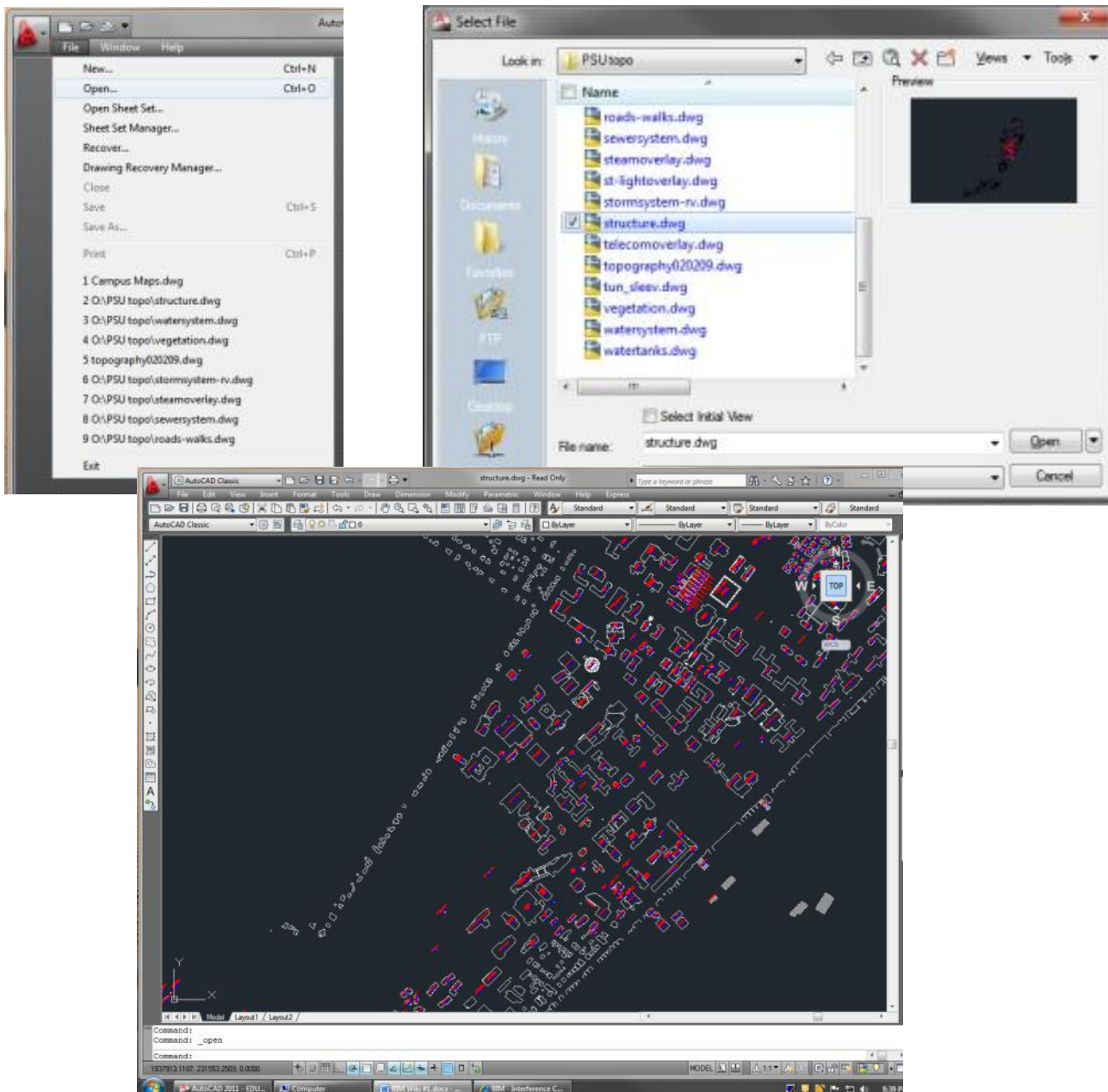
Purpose:

Diagram the process through which multiple layers that share the same base point can be layered in AutoCAD to create a comprehensive graphic representation of the existing conditions of a landscape, building, or any other multi-layered entity.

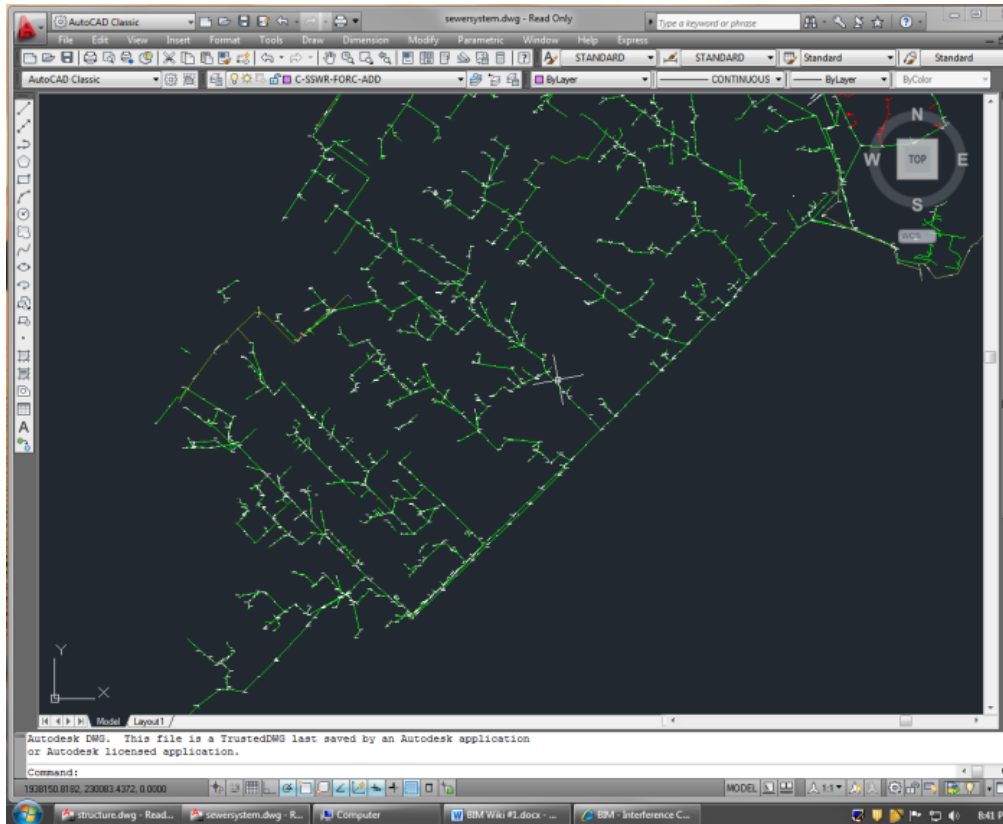
Note: This tutorial is design for the layering of AutoCAD files that share a common base point. If you wish to join layers that do not share a common base point, a point of reference will have to be established by setting the drawing base points to a common reference point (in this case, the corner of a building or a utility junction that is common between each layer).

Steps:

- 1.) Open the base file in AutoCAD. For this example, I have used the structures information for the Pennsylvania State University – University Park Campus.



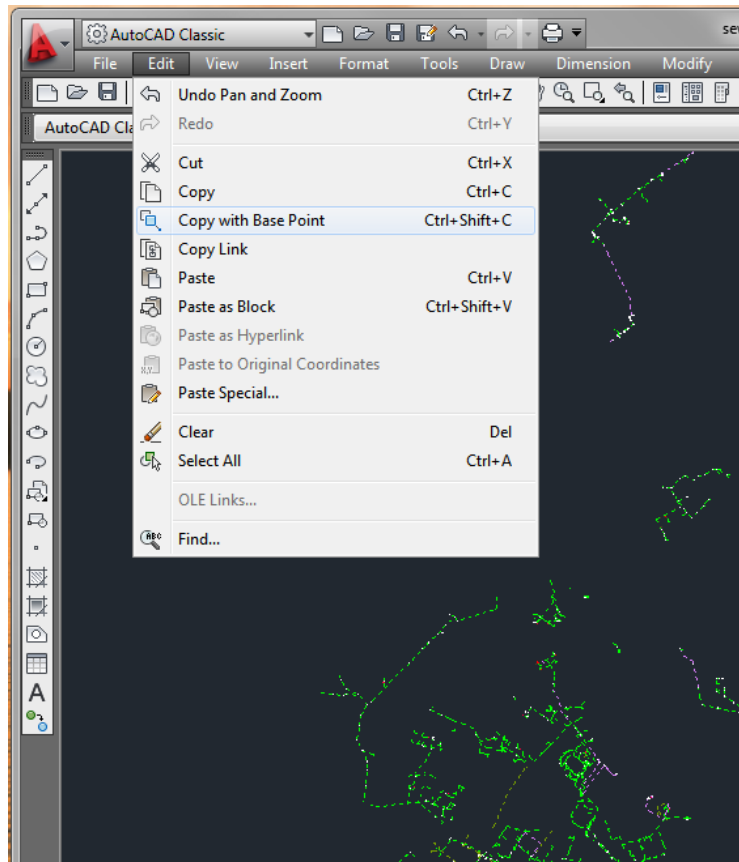
- 2.) Repeat Step #1 to open the first overlay file in AutoCAD. For this example, I have used the sewer system information for University Park.



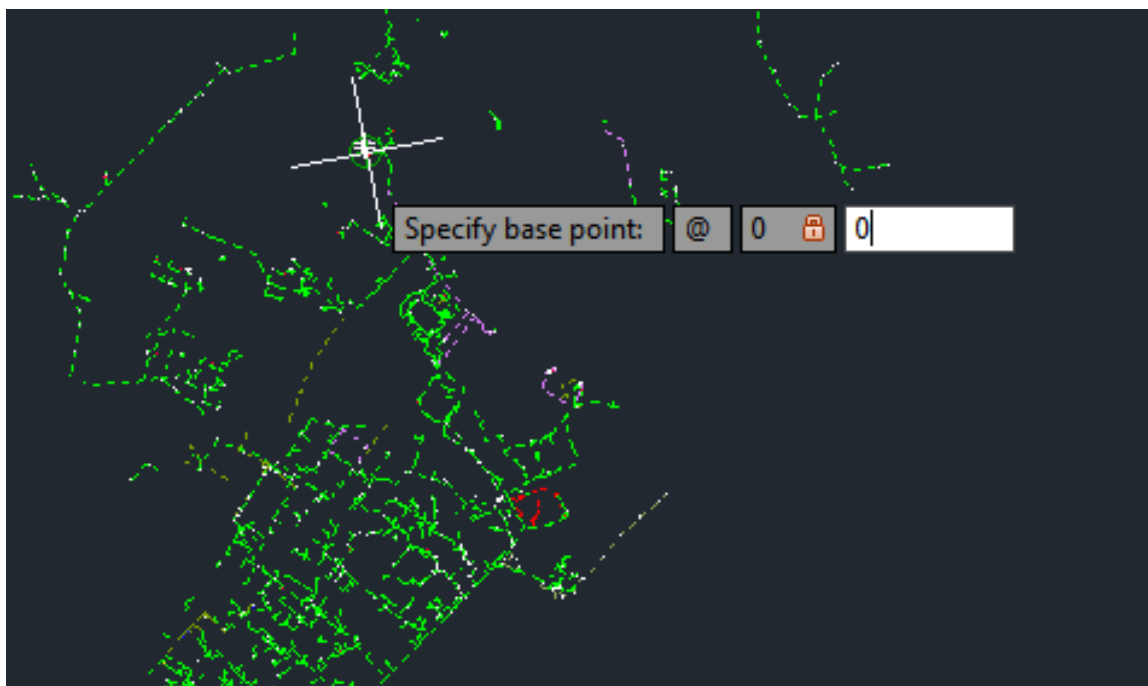
- 3.) It's apparent that the locations of the sewer lines correlates with the location of the structures, but in order to fully appreciate the relationships between these two layers, an layer overlay is required. To do this, first select all of the sewer lines with a crossing window.



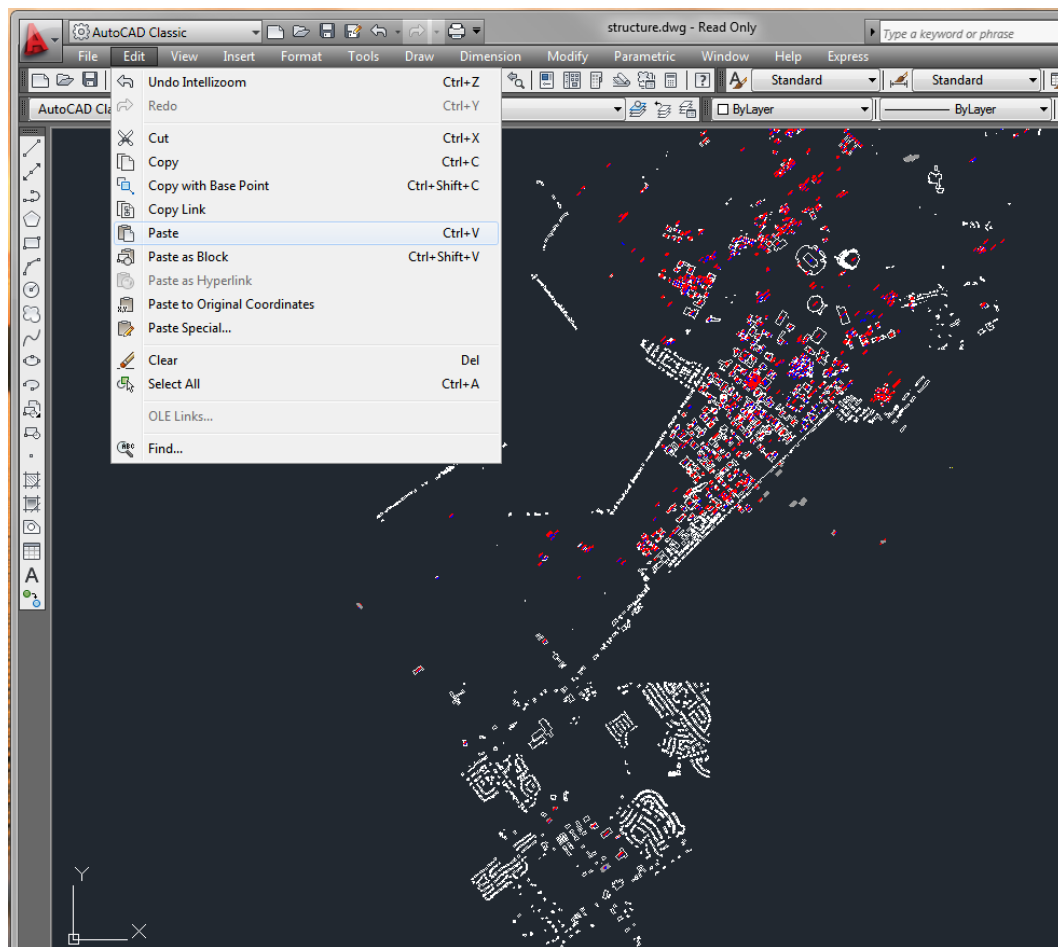
4.) Once all of the sewer lines are selected, click Edit -> Copy With Basepoint.



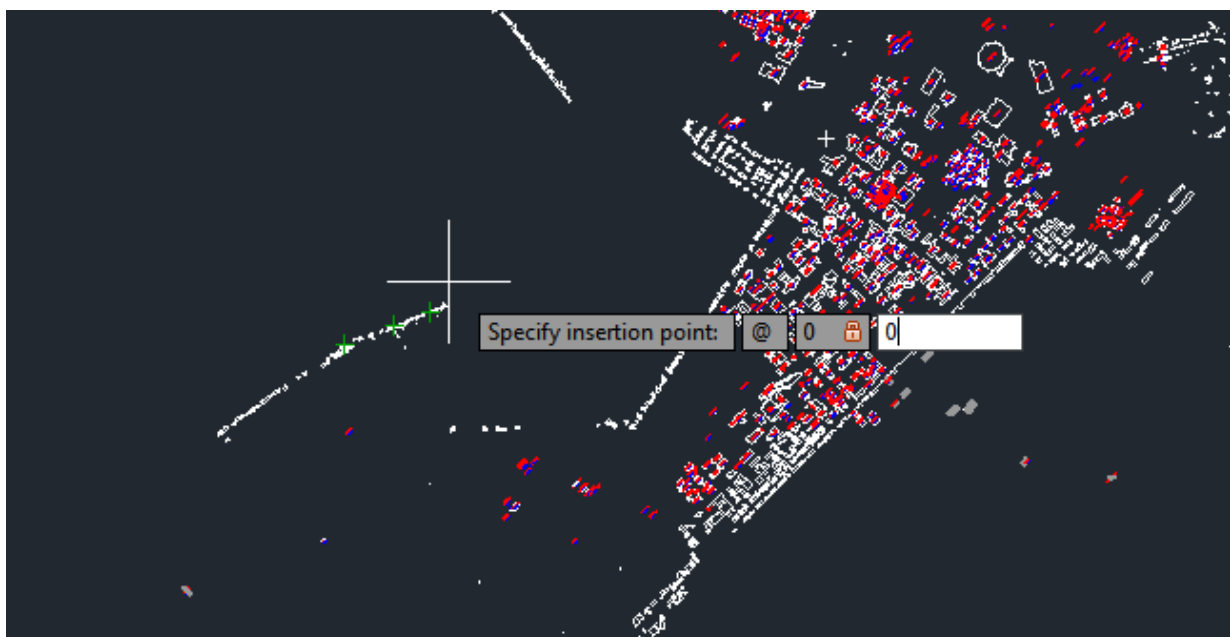
5.) Instead of selecting a basepoint with the AutoCAD cursor, type "0", then press "TAB" and type "0" again.



- 6.) Now switch AutoCAD windows to the file containing the University Park campus structures information. Click Edit -> Paste.



- 7.) Instead of selecting an insertion point with the AutoCAD cursor, again type "0", then press "TAB" and type "0" again.



- 8.) The sewer lines layer should appear on the structures workspace, properly aligned with the existing structures. This provides an accurate representation of the interaction between the structures on the campus and the sewer lines that service them.



- 9.) This process can be repeated as many times as necessary. For example, if you wanted to explore the interactions between the sewer, water and telecommunications lines around the Engineering Units, you would open the water lines and telecommunications lines AutoCAD files, repeat steps #3-7 for each file.

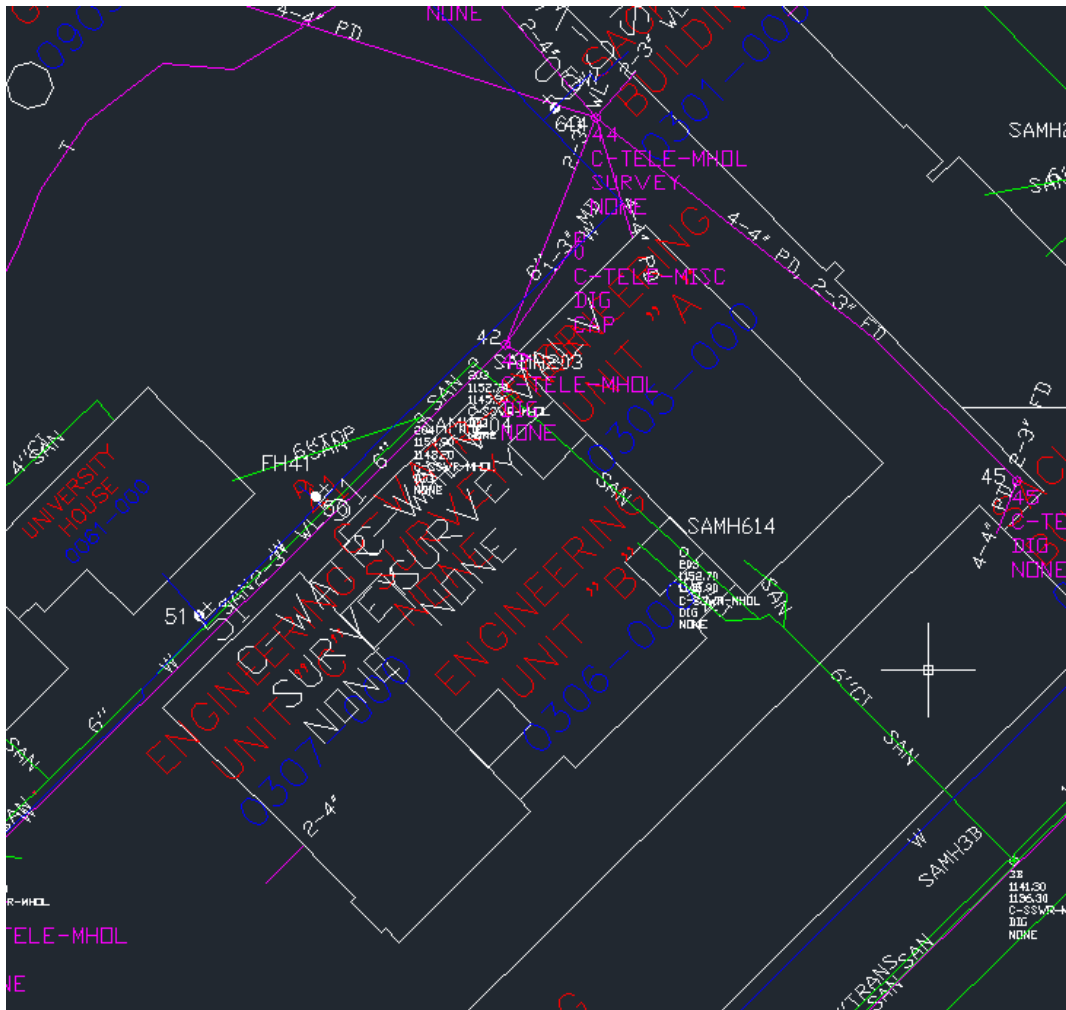
Water Lines



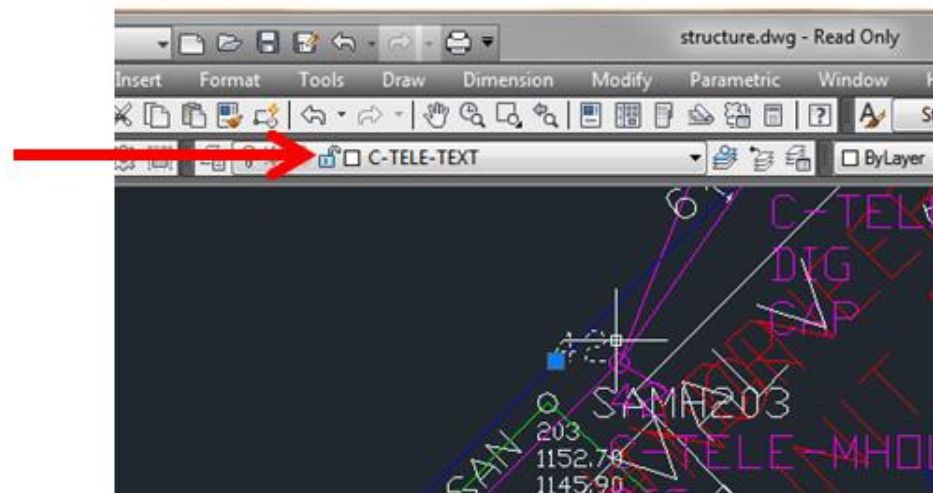
Telecommunications Lines



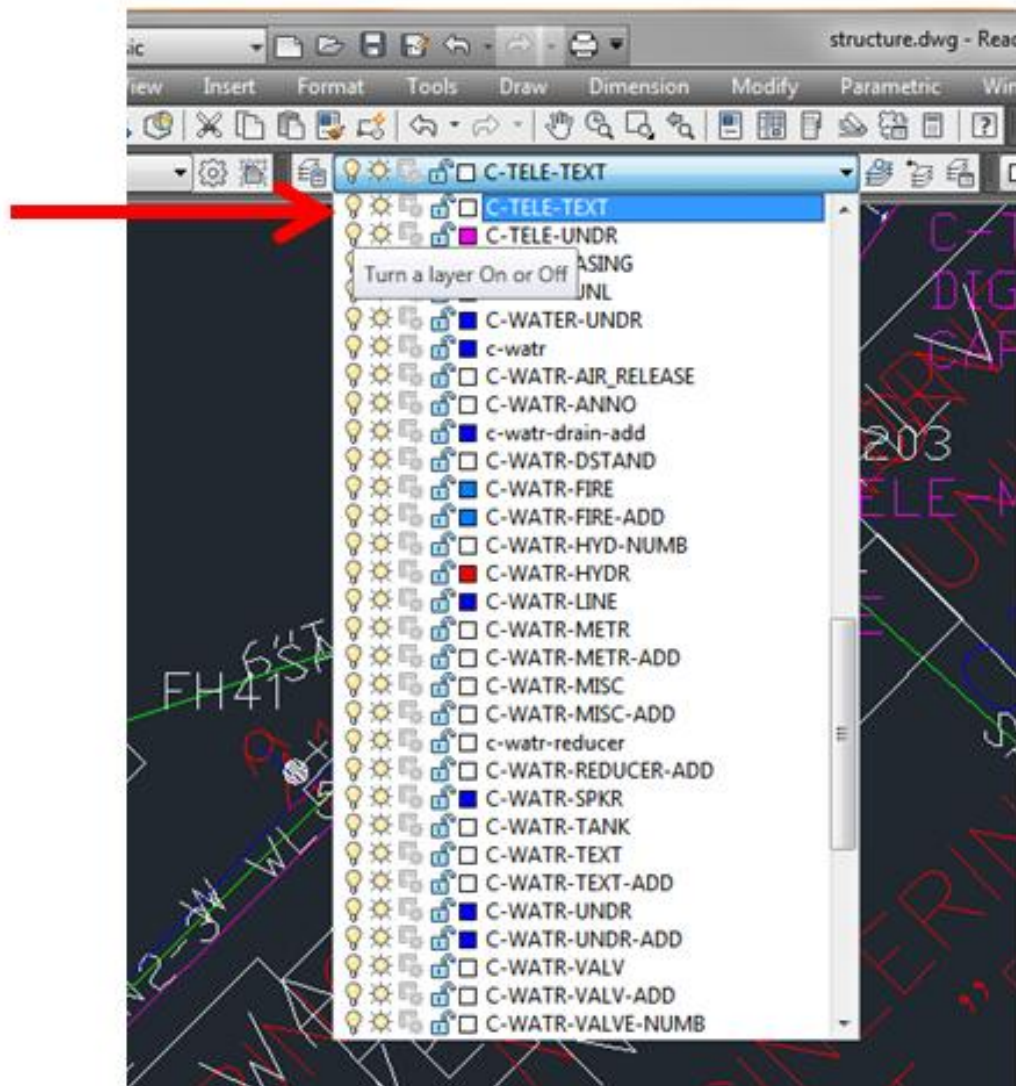
- 10.) After overlaying these files, it is possible to gain a complete understanding of the interactions between the sewer, water and telecommunications lines around the Engineering Units.



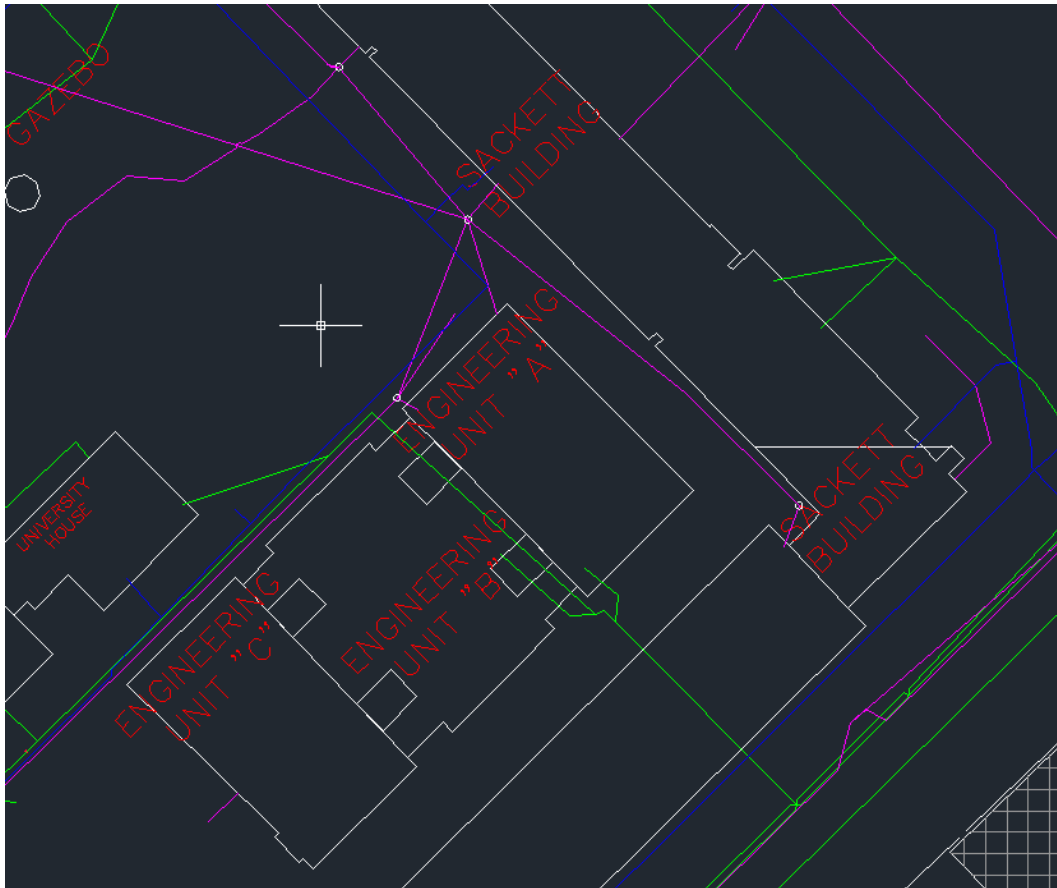
- 11.) If the excessive amount of text on the layers proves to be a hindrance in the understanding of the interactions between the layers in the drawing, it may be desirable to hide all of this text. To do so, click on a text object to determine the layer that it is on.



12.) To hide this layer, click the light bulb next to the layer's title in the dropdown layer menu.



13.) Repeat step #12 in order to “clean up” the drawing a bit more, eliminating unwanted text layers, in order to achieve an effective level of detail that does not crowd the drawing.



14.) Each time that additional information is deemed relevant, more layers can be added and simplified at any time by following the aforementioned steps until a drawing contains all of the required information to meet the goals of the user.